

ZM.. , ZM../A Terminal housing for magnetic valves

Terminal housing for optional control of Landis & Staefa magnetic valves with various control signals:

- DC 0 ... 10 V
- DC 4 ... 20 mA
- DC 0 ... 20 V phase cut



ZM.., ZM../A

Types

Control signal	Power: Up to 40 W		Up to 120 W	CE mark
	Protection standard : IP31	IP54	IP31	
DC 0 ... 10 V or DC 0 ... 20 V phase cut	ZM100/A	ZM101/A	ZM200/A	Yes
DC 4 ... 20 mA or DC 0 ... 20 V phase cut	ZM120/A	ZM121/A	ZM220/A	Yes
DC 0 ... 20 V phase cut	ZM110	ZM111	ZM210	No

Technical data

Supply voltage ZM100/A, ZM101/A, ZM120/A, ZM121/A, ZM200/A, ZM220/A	AC 24 V +15/-10 %, 50 ... 60 Hz Extra-low voltage SELV / PELV
Current consumption	Max. 1 mA at DC 0 ... 10 V (Input impedance 2 x 56 kΩ)
Control signals (see "Types" above)	DC 0 ... 10 V DC 4 ... 20 mA DC 0 ... 20 V phase cut
Shunt resistance (DC 4...20 mA)	150 Ω
Max. output power: (see "Types" above) ZM1.. , ZM1../A ZM2.. , ZM2../A	Up to 40 W Up to 120 W
Mean operating power	See valve data sheet
Housing material	Aluminium
Connection terminals	For 1 x 4 mm ² or 2 x 2.5 mm ² wire
Electrical safety	Extra-low voltage SELV / PELV
Protection standards	IP31 / IP54, see "Types" table
Ambient temperature: ZM100/A, ZM110, ZM120/A ZM101/A, ZM111, ZM121/A ZM200/A, ZM210, ZM220/A	2 ... 50 °C -40 ... 50 °C 2 ... 50 °C
Dimensions: (and see page 3) ZM1.. ZM2..	40 x 60 x 76 mm 40 x 90 x 115 mm
Weight: ZM100/A, ZM111, ZM120/A ZM101/A, ZM121/A ZM110 ZM200/A ZM210 ZM220/A	0.22 kg 0.24 kg 0.20 kg 0.44 kg 0.38 kg 0.46 kg
CE	The ZM../A meets the requirements for CE marking

Principle of operation

The control properties of the magnetic valve are not affected by the type of terminal housing or the type of control signal.

ZM../A

Terminal housings ZM100/A, ZM101/A, ZM120/A, ZM121/A, ZM200/A and ZM220/A are signal transducers / power amplifiers. They convert a DC 0 ... 10 V or DC 4 ... 20 mA control signal and an AC 24 V power supply into a DC 0 ... 20 V phase cut signal (see diagram below).

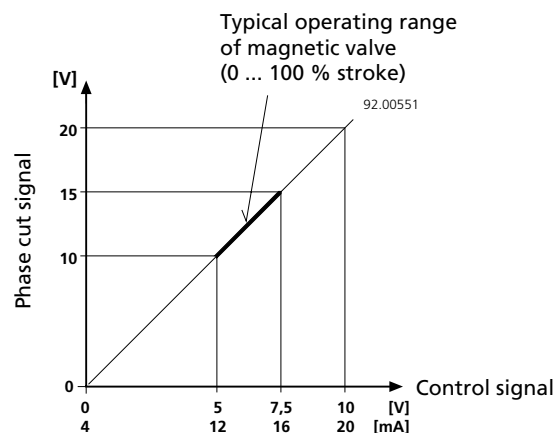
The differential amplifier with signal inputs (3) and (4) is isolated from the AC supply by a high resistance (see block diagram).

For 3-wire applications the signal negative (3) must be connected to AC supply terminal (1).

It is also possible to use the ZM../A terminal housing as a "straight-through" electrical housing, supplied directly with a DC 0 ... 20 V phase cut signal. In this case, the AC 24 V supply voltage must *NOT* be connected.

ZM110, ZM111, ZM210

The ZM110, ZM111 and ZM210 terminal housings are "straight-through" electrical housings only.



Note

ZM../A terminal housing used with DC 0 ... 20 V phase cut signals:

Do not connect AC 24 V to Terminals 1 and 2.

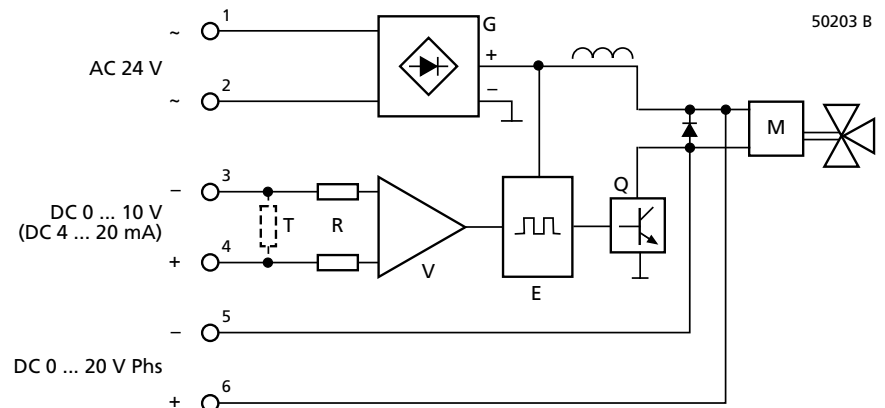
Connect Terminal 5, (marked " - ")

- to the appropriate Y output terminal on UNICO, KLIMO and MULTIREG (type 9 controllers)
- to Terminal 2 on type NKOA terminal modules.

Key to block diagram:

- E* Electronic phase cut conditioning
- G* Bridge rectifier
- M* Magnetic valve
- Q* Phase cut output
- R* 56 kΩ input resistors
- T* 150 Ω shunt (ZM120/A, 121/A, 220/A with DC 4 ... 20 mA only)
- V* Differential amplifier

ZM../A block diagram



Transformer sizing

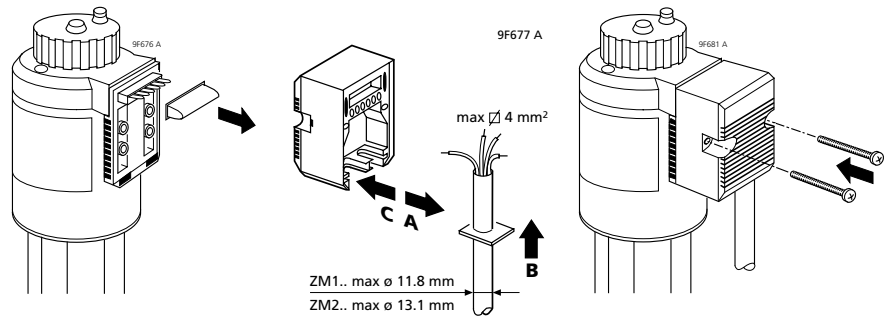
Transformer power $P_{Tra} = 1.4 \cdot \text{Sum of the individual loads}$

Installation / Mounting

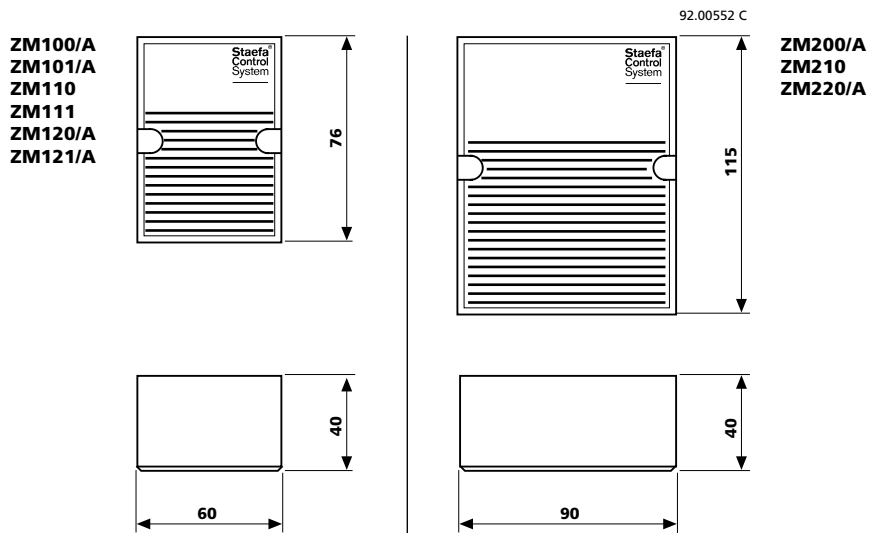
Always disconnect the power supply before fitting or removing the ZM.. or ZM../A.

Caution:

It is important to use the cable cross-sections appropriate to the various cable lengths used.



Dimensions [mm]



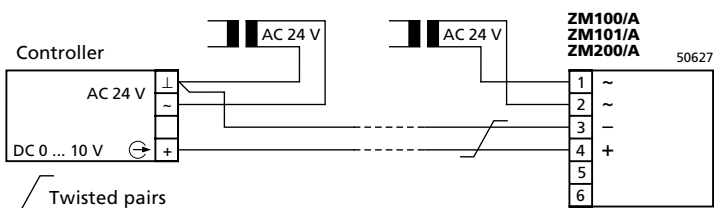
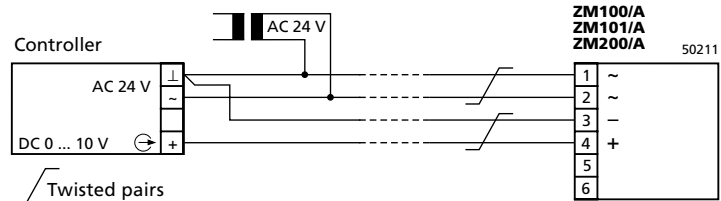
ZM.. and ZM../A connection diagrams

1 ZM../A with DC 0 ...10 V control signal

a) 3-wire connection to controller

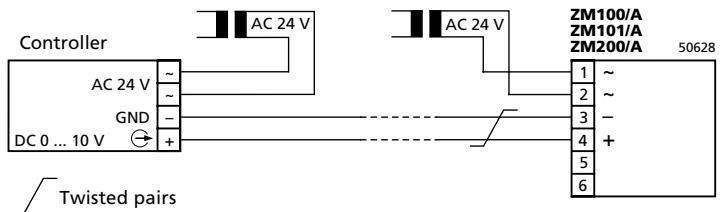
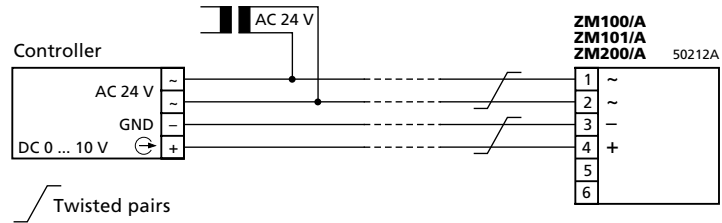
Note

If, for reasons of cross-section, the AC 24 V and DC 0 ...10 V (or DC 4 ... 20 mA) cables are routed separately, the AC 24 V cable need not be twisted.



b) 4-wire connection to controller

ZM../A supplied from controller transformer or (over longer distances) from a separate transformer.

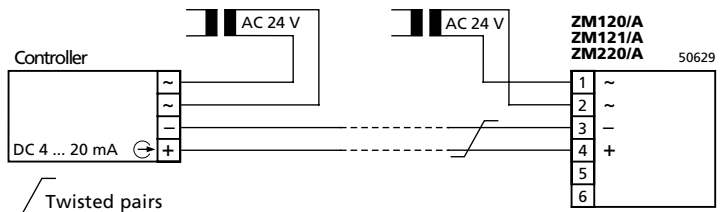
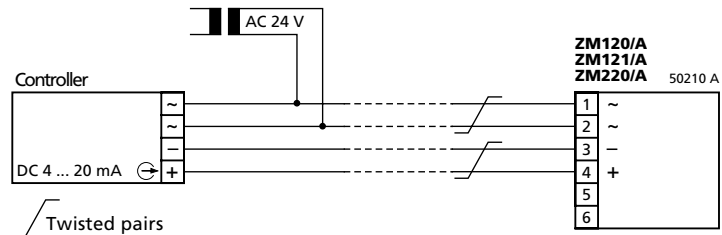


2 ZM../A with DC 4 ... 20 mA control signal

ZM../A supplied from controller transformer or (over longer distances) from a separate transformer.

Note

Several DC 4 ... 20 mA receivers can be driven by the same control signal (series connection – check input impedance!).



3 ZM.. with DC 0 ... 20 V phase cut signal

a) ZM110, ZM111, ZM210 (without power amplifier)

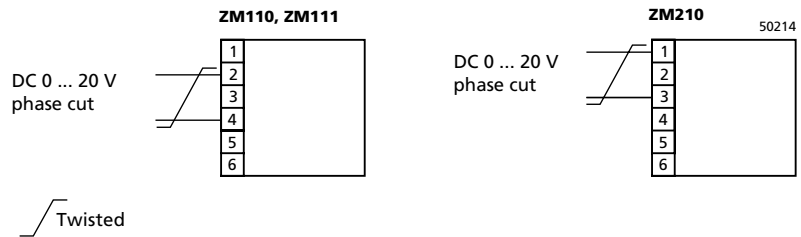
Note

ZM../A terminal housing used with DC 0 ... 20 V phase cut signals:

Do not connect AC 24 V to Terminals 1 and 2.

Connect Terminal 5, (marked " - ")

- to the appropriate Y output terminal on UNICO, KLIMO and MULTIREG (type 9 controllers)
- to Terminal 2 on type NKOA terminal modules.



b) ZM100/A, ZM101/A, ZM200/A, ZM120/A, ZM121/A, ZM220/A (with power amplifier)

